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PATENT TRADEMARK OFFICE

Docket No: 5986/1H320US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Naomi HARLEY et al.	Confirmation No.:	8214
Serial No.:	09/897,751	Art Unit:	2878
Filed:	June 29, 2001	Examiner:	HANNAHER, Constantine
For:	A NEW MINIATURE PERSONAL RADON AND THORON DETECTOR		

MARK-UP FOR AMENDMENT OF JUNE 9, 2003
PURSUANT TO 37 C.F.R. §1.121

June 9, 2003

Mail Stop Non-Fee Amendment
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

IN THE SPECIFICATION:

On page 7, bridging page 8, delete the last paragraph and insert the following:

Figures 3A, 3B and 3C are diagrams respectively illustrating the perspective, top and side views of an embodiment of the monitor 20 without the caps covering the three chambers 11, 12 and 13. Figures 3B and 3C also show the dimensions of the particular embodiment of the

monitor according to the invention. O-shaped inserts 81, 82 and 83, made of ABS (CNi), are respectively disposed in the chambers 11, 12 and 13 to hold the SSNTD film and a covering thin aluminum MYLAR® (e.g., aluminized polyester) sheet in place. A diffusion barrier is also disposed in each of the chambers 12 and 13 to prohibit entry of thoron thereto, which is further described below. An O-ring seal sits on top of each of the O-shaped inserts 81, 82 and 83 and serves to prevent air leakage around their corresponding diffusion barrier (if any).

On page 8, delete the first paragraph and insert the following:

Figure 4 is a diagram illustrating a cross-sectional view of chambers 12 and 13 in an embodiment of the monitor 20 according to the invention. From bottom to top, the chamber (12 or 13) comprises an SSNTD film (112 or 113), a metallized MYLAR® sheet (122 or 123), an O-shaped insert (82 or 83), a diffusion barrier (102 or 103), an O-ring seal (92 or 93), a cap (72 or 73) with a conducting foam (142 or 143), and a screw thread closure (132 or 133) for receiving the cap. The conducting foam prevents entry of the radon and thoron decay products and protects the detection chamber from nuisance dust. The diffusion barrier serves to prevent entry of thoron into the chambers 12 and 13, which is made of numerous materials, including electrically conducting 3 mil [Mylar] MYLAR® film. The metallized MYLAR® sheet covers the SSNTD to maintain an electrically conducting interior. The preferred SSNTD film according to the invention is a 9x9 millimeter film of allyl diglycol carbonate, commercially available under the designation "CR-39" with a preferred thickness of 0.9 millimeters. Another embodiment of the SSNTD film is a film made of cellulose acetate, commercially available under the designation "LR115." The metallized sheet serves to maintain electrical conductivity and as a protective cover to protect the SSNTD from visible light and dust. In the preferred embodiment

of the monitor 20, the metallized sheet comprises a thin layer of aluminized MYLAR® having a weight of, e.g., 1.7 milligrams per square centimeter.

On page 8, delete the last paragraph and insert the following:

The metallized sheet is electrically conductive. There is also an absence of electrical charge on other components of the monitor 20. It has been found that the presence of electrical charge on the sheet causes severe concentrations of nuclear damage tracks on the SSNTD. These track concentrations were seen to occur to such a degree that track counting is most difficult, and may even be rendered impossible in some cases. Because the metallized MYLAR® sheet does not hold an electrical charge, the radiation damage tracks are generally uniformly distributed over the SSNTD film and the calibration of the SSNTD is generally constant and predictable in all environments.

On page 9, delete the second paragraph and insert the following:

Figure 5 a diagram illustrating a cross-sectional view of chamber 11 in an embodiment of the monitor 20 according to the invention. Chamber 11 is generally the same as chambers 12 and 13 as shown in Figure 4, except that chamber 11 does not include the diffusion barrier. From bottom to top, the chamber 11 comprises an SSNTD film 111, a metallized MYLAR® sheet 121, an O-shaped insert 81, an O-ring seal 91, a cap 71 with a conducting foam 141, and a screw thread closure 131 for receiving the cap 71. The conducting foam prevents entry of the radon and thoron decay products and protects the detection chamber from nuisance dust. The metallized MYLAR® sheet 121 covers the SSNTD 111 to maintain an electrically conducting interior. The preferred SSNTD film according to the invention is a 9x9 millimeter film of allyl diglycol carbonate, commercially available under the designation "CR-39" with a preferred

thickness of 0.9 millimeters. The metallized sheet 121 serves as a protective cover to protect the SSNTD 111 from visible light and dust. In the preferred embodiment of the monitor 20, the metallized sheet 121 comprises a thin layer of aluminized MYLAR® having a weight of, e.g., 1.7 milligrams per square centimeter.

Respectfully submitted,

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SUBSTITUTE ABSTRACT OF THE DISCLOSURE

[The present invention relates to a] A Rn222 (radon) and Rn220 (thoron) radiation monitor that uses alpha-track detection film in multiple, separate chambers to detect radiation[. The invention further describes use of], wherein different diffusion barriers are used in each of the chambers to allow for signal differentiation between the chambers. The signal differentiation allows for differentiation between the levels of thoron and radon in the atmosphere tested. [In a preferred embodiment of the invention, the] The radiation monitor [has] may have three or four separate chambers, each with an electrically conductive housing and a cap with at least one opening to permit entry of ambient air. Inside each of the housings is an alpha-track detecting film, such as a solid-state nuclear track detector (SSNTD), with a thin electrically conducting cover. In one or more of the chambers is a diffusion barrier and seal placed within the housing to generally isolate the detecting film from thoron radiation in the housing. [Use of diffusion barriers with different diffusion rates or properties allows for signal differentiation so that a specific measurement can be made of thoron levels separate from the radon levels present in the atmosphere tested.]